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THE HERBARIUM OF THE NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

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The Herbarium of the National Botanical Research Institute, Lucknow is, relatively speaking, a recent establishment when compared with similar institutions of repute. Nevertheless, it has grown into a dependable organisation to cater to the needs of the scientific community and to fulfill all the functions of a modern herbarium.

The germ of this herbarium was laid in the year 1929, when a young and enthusiastic research student of Lucknow University, while botanising in the Guraiz Valley of Kashmir, was inspired by his teacher to explore the medicinal plant wealth of the country. The student realised at the same time that for any really fruitful and outstanding botanical activity there was a need to establish a chain of botanical gardens, each furnished with a well organised herbarium. The research student was Kailas Nath Kaul later on Founder Director of the National Botanic Gardens, and the teacher, Dr. S. K. Mukerji, Reader in Botany, Lucknow University.

Prof. Kailas Nath Kaul, founder Director of the above institute undertook a botanical tour in 1929 for collection of medicinal plants. On his return he set out to give shape to the ideas gathered during the Kashmir trip. He persuaded Prof. Birbal Sahni, the then Head of the Botany Department of Lucknow University, to initiate talks with the Uttar Pradesh Government for establishing a garden. As a result, a plot of land in the local Government. Horticulture Garden was assigned to the University in 1932. However, except for collection and introduction of some medicinal plants at the plot, no progress could be made.

In the meanwhile Kaul left India in 1939 for U.K. to work in the Royal Botanic Gardens, Kew. On his return from Kew in 1944, he continued his efforts towards the garden and as a result the Uttar Pradesh Government in 1948 sanctioned some funds and a skeletal staff for the purpose of establishment of a botanical garden which would become a centre for botanical and horticultural research besides fulfilling the needs of a plant nursery and a public park. Kaul was appointed as the honorary Director and was given the Lucknow Horticulture Garden (Popularly known as Sikandar bag) to be organised as the National Botanic Gardens which is now known as National Botanical Research Institute.

A small Herbarium was organised simultaneously with his collections mainly from Delhi, Mussorie and Kashmir areas. The specimens of grasses and other herbaceous elements gathered at Kanpur and other places of Uttar Pradesh including Chaubattia near Ranikhet were transferred from Government Agricultural College, Kanpur to Lucknow. Prof. Kaul also acquired for the budding herbarium, Mr. Norman Gill's prized collection of Kumaon plants, a set of about 1000 specimens. This collection was made by Gill, while working as Superintendent of Kumaon Government Gardens at Douglas Dale in Jeolikote near Nainital from 1909-1921. In this capacity Gill collected throughout the Nainital District. He is incidentally rated as the outstanding pioneer worker who tried in Kumaon a number of medicinal plants including belladonna, olive, ipecac, saffron, chamomile and ginger.

More than 100 specimens collected mostly by Dr. Kalipada Biswas, Superintendent, Sibpore Botanical Garden, from Darjeeling area were presented to the new herbarium and over 250 plant specimens were gifted by Annamalai University. A set of about 1000 foreign specimens belonging to the flora of Canada, United States of America and Brazil was also acquired. Between 1949 and 1951, when the herbarium workers included Mr. (now Dr.) D. D. Awasthi and Mr. Hiralal (Plant Collector), the herbarium was enriched by collections made from Lucknow, Dehra-Dun, Chakrata, Lakhimpur, Gonda, Tulsipur, Tanakpur, Milam and Pindari Glaciers, Gangotri and Jamnotri and other interesting forest areas of Uttar Pradesh. Dr. Awasthi, a well known lichenologist now, left in 1952 to join the Botany Department of Lucknow University. Mr. Hiralal (now retired) has a unique knowledge of the Indian flora as well as cultivated taxa even though he lacked academic qualifications.

The activities of the National Botanic Gardens had by this time increased to attract the attention of the Council of Scientific and Industrial Research and thanks to the efforts of Sir Shanti Swarup Bhatnagar, the then Director of Scientific and Industrial Research, the institution was transferred to that body on 13th April, 1953 with Prof. Kaul as its first Director.

The collection tempo now received a tremendous boosting by the scientific workers of N.B.G. making collections during their excursions to different parts of India. Between 1953 and 1956, Prof. Kaul led several extensive collection trips to Kashmir, Saurashtra, Hyderabad, Deccan and other areas by road. The collection parties included Mss. G. S. Srivastava, Virendra Chandra and S. K. Jain. Dr. Jain (now Director of the Botanical Survey of India) joined N.B.G. as new incharge of the Herbarium Section. The Herbarium staff also included the late R. C. Bharadwaja a Gramineae expert, J. G. Srivastava, whose interest lay in Bihar flora, B. K. Nayar, who was primarily interested in taxonomy and morphology of ferns and S. L. Kapoor.

To Dr. Jain, goes the credit of organising the herbarium activities in full measure and on a sound footing.

It was in the year 1959 that the herbarium was transferred to a new building, a portion of which was especially designed to house it. The herbarium wing of the new building is a 3-storey structure, with provision for the 4th and is designed on the pattern of the Kew Herbarium. It has a glass-brick roof and wide windows to admit plenty of natural light.

Before the transfer of the herbarium from old to the new building it had come under the charge of the author consequent upon the departure of Dr. Jain to the Botanical Survey of India (in 1956), untimely death of Bharadwaja a little later and Mr. Srivastava (J.G.) taking up different research work.

Regular plant collection trips were undertaken to various parts of the country by scientific workers including G. S. Srivastava. Chandra, Nayar, Jain, J. G. Srivastava, Bharadwaja and Kapoor. This added considerably to the Indian collection of the herbarium. The important areas covered included Kashmir, Uttar Pradesh, Rajasthan, Saurashtra and areas of Western Ghats, Bihar, Orissa, Khasi and Jaintia Hills, Eastern Ghats, Nilgiri and Pulney Hills, West and East Coast of India and Kerala. Later S. L. Kapoor, K. M. Balapure and V. S. Sharma undertook excursions to the localities in Madhya Pradesh, Assam, Sikkim, Orissa, Kumaon and Garhwal Himalayas and other parts of Uttar Pradesh and Rajasthan. Recent collections of S. R. Paul from Netarhat Plateau, Palamau District, Bhagalpur and Monghyr District of Bihar and those of J. K. Maheshwari from Shivpuri National Park (Madhya Pradesh), South-East and West Rajasthan and Singhbhum (Bihar) are other notable acquisitions.

The herbarium also developed exchange relations with some of the important botanical centres of the world, acquiring extensive collections.

Prof. Kaul was successful in securing the Bryological collections of Late Prof. S. K. Pande the well known Bryologist and his pupils. Prof. Pandey and his pupil Dr. K. P. Srivastava joined the N.B.G. but the former soon left to take up Professorship of Botany at Sagar University.

The herbarium (abbreviation LWG) now possesses a total collection of about 1,00,000 plant specimens including the cryptogamic material. The break up is as follows :

Fungi	2,000
Lichens	3,000
Bryophytes	1,000
Pteridophytes	3,000
Gymnosperms & Angiosperms over	80,000
Carpological collections	15,000

Fungi collections, mainly Basidiomycetes are from Assam, Khasi and Jaintia Hills, Dimapur and Imphal area, Western Himalayas, Uttar Pradesh, Orissa, Baster, Western Ghats, Nilgiris and Pulney Hills. The greater part of the collections is by N.B.G. workers, *viz.*, Mr. R. N. Ghosh and Dr. N. C. Pathak. Several species have been reported to occur in India for the first time.

Lichen specimens have been mainly collected by Mr. Ajai Singh from Lucknow and Kumaon and Garhwal region (Uttar Pradesh), Mount Abu (Rajasthan), Kerala and Andaman Islands.

A small collection of Lichens made by Wingfield Dudgeon from Mussoorie has been acquired some time ago. The N.B.R.I. material has been authenticated by world specialists on various genera, for instance *Collema* by G. Degelius of Sweden, *Leptogium* by H. A. Sierk of U.S.A. and D. D. Awasthi, *Parmelia* and *Cetrelia* by M. E. Hale of U.S.A., *Cladonia* by T. Ahti of Finland. *Stereocaulon* by I. M. Lamb of U.S.A. and Foliicolous lichens by R. Santesson of Sweden.

Bryological collections are mainly from Eastern Himalayas including Sikkim, Western Himalayas, Satpuras, Eastern Ghats, Western Ghats and Nilgiris. There is a good set of Bryological exsiccatae procured from Hattori Botanical Laboratory, Japan.

The ferns represent most of the 800 species that are reported to occur in India.

The specimens have been collected from Kashmir, Himachal Pradesh, Guptakashi, Tungnath, Madmaheshwar, Badrinath and Kedarnath, Dehradun, Mussoorie and Chakrata, Khasi and Jaintia Hills, Darjeeling area, Imphal, North Cachar Hills, Gangetic Plain, Nilgiri Hills, Kodaikanal, Malabar Forests, Agambe, Mercara, Dandakaranya forests and Andaman Islands. The important collectors have been Dr. B. K. Nayar, Dr. Prakash Chandra and Mr. Subhash Chandra. The team established a new genus, several new species and some new records for India.

The Indian material has been collected from all over the country by our own parties headed mostly by Mr. Peerzada S. H. Khan who has worked with Dr. Bahadur Singh a well known seed morphologist and embryologist and Dr. R. P. Singh another specialist in the field. The exotic material has been procured on exchange basis from countries like U.S.A., U.S.S.R., Great Britain, France, Germany, Poland, Belgium and Australia.

The N.B.G. library possesses almost all the world Floras and many rare books on floristics. Most of the important taxonomic journals are subscribed. There are about 10,000 reprints of research papers and about 300 microfilms and microfiches of some of the rare older literature and Linnean and De Candollean herbaria.